

1 **FURTHER DECK PREPARATION**
2 **September 30, 1996**

3 **General Requirements**

4 1.01 Description

- 5
6 A. This work shall consist of preparation and repair of the bridge deck surfaces
7 designated and marked for further deck preparation.
8

9 **Material Specifications**

10 2.01 Patching Concrete For Modified Concrete Overlays

- 11
12 A. Patching concrete for modified concrete overlays shall be either modified
13 concrete or concrete Class M.

14
15 Concrete Class M shall be proportioned in accordance with the following mix
16 design:

17

18	Cement (Type I or II)	705 pounds
19	Fine Aggregate	1,305 pounds
20	Coarse Aggregate	1,680 pounds
21	Water/Cement Ratio	0.37 maximum
22	Air	6% ± 1 1/2%
23	Slump	5 in. ± 1 in.

24

25 The aggregate shall meet the requirements of Section 9-03.1. Coarse
26 aggregate shall be grading No. 6 and fine aggregate shall be Class 1.

27
28 The use of a water-reducing admixture, AASHTO M 194 Type A, will be
29 required to produce patching concrete with the desired slump. Water-
30 reducing, air-entraining, and any other admixtures shall be used in
31 accordance with the manufacturer's recommendations and as approved by
32 the Engineer. Set accelerating admixtures, AASHTO M 194 Type B, will not
33 be allowed.

- 34
35 B. For small deck repair and as determined by the Engineer, the Contractor may
36 use the same modified concrete as that used in the overlay. See Section
37 3.03(B) of this Special Provision.

- 38
39 C. When there are no time constraints for the curing of the patching material,
40 Class 4000 concrete as specified in Section 6-02.3(2) may be used.

41
42 **Construction Requirements**

43 3.01 Equipment

- 44
45 A. Power Driven Hand Tools
46 Power driven hand tools, except for the following, may be used:
47
48 1. Jack hammers heavier than the nominal 30-pound class.
49
50 2. Chipping hammers heavier than the nominal 15-pound class.

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52 The power driven hand tools shall be operated at angles less than 45
53 degrees as measured from the surface of the deck to the tool.
54

1 B. Hydro Demolisher

2 If the Contractor elects to use a hydro demolisher, the hydro demolisher shall
3 meet the requirements as outlined in the Special Provisions titled **LATEX**
4 **MODIFIED CONCRETE OVERLAY** or **MICROSILICA MODIFIED**
5 **CONCRETE OVERLAY**.
6

7 3.02 Deck Preparation
8

9 A. All concrete in the repair area shall be removed by chipping, hydro
10 demolishing, or other approved mechanical means to a depth necessary to
11 remove all loose and unsound concrete. If unsound concrete exists around
12 the steel reinforcing bars, or if the bond between concrete and steel is
13 broken, concrete must be removed to provide a 3/4-inch minimum clearance
14 around the steel reinforcing bars.
15

16 B. Care shall be taken in removing the deteriorated concrete to not damage any
17 of the existing deck or steel reinforcing bars that are to remain in place. All
18 removal shall be accomplished by making neat vertical cuts and maintaining
19 square edges at the boundaries of the repair area. Cuts made by using
20 sawing or hydro demolishing machines shall be made after sufficient
21 concrete removal has been accomplished to establish the limits of the
22 removal area. In no case shall the depth of the vertical cut exceed 3/4 inch
23 or to the top of the top steel reinforcing bars, whichever is less. Care shall be
24 taken to not damage the steel reinforcing bars by cutting too deeply. The
25 exposed steel reinforcing bars and concrete in the repair area shall be
26 sandblasted or hydro-blasted and blown clean just prior to placing concrete.
27 Bridge deck areas outside the repair area or steel reinforcing bar inside or
28 outside the repair area damaged by the Contractor's operations, shall be
29 repaired by the Contractor at the Contractor's expense and to the satisfaction
30 of the Engineer.
31

32 3.03 Placing Patching Concrete
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34 A. Before placing any patching concrete, flush the existing concrete in the repair
35 area with water and make sure that the existing concrete is well saturated.
36 Remove any free standing water prior to placing the patching concrete.
37 Place the patching concrete other than latex modified concrete onto the
38 existing concrete while it is wet.
39

40 If latex or microsilica modified concrete is used as the patching concrete, a
41 thin slurry bond grout shall be scrubbed into the existing concrete surface.
42 The bond grout shall be as specified in the Special Provisions titled **LATEX**
43 **MODIFIED CONCRETE OVERLAY** or **MICROSILICA MODIFIED**
44 **CONCRETE OVERLAY**.
45

46 B. If the Contractor elects to use as a patching material the same modified
47 concrete as that used in the overlay, then the repair areas shall be filled flush
48 with the deck surface sufficiently in advance of the overlay placement so that
49 the material will not roll back under the screeds but shall not be placed more
50 than one hour in advance of the overlay placement.
51

52 C. Areas patched with modified concrete or concrete Class M shall be wet cured
53 for 24 hours in accordance with the Special Provisions titled **LATEX**
54 **MODIFIED CONCRETE OVERLAY** or **MICROSILICA MODIFIED**

1 **CONCRETE OVERLAY.** Areas patched with concrete Class 4000 shall
2 be cured in accordance with Section 6-02, except curing compound shall not
3 be used. During the curing period, all vehicular and foot traffic shall be
4 prohibited on the repaired area.